

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Drayton Miller

Attorney Docket No: 746-A03-008

Application No: 10/748,839

Group Art Unit: 1772

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Examiner: CHEVALIER, Alicia Ann

For: KNOCKDOWN CORRUGATED BOX FOR TEMPERATURE CONTROL AND
METHOD OF MAKING

APPEAL BRIEF

Commissioner for Patents

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Sir:

Appellant submits his brief in support of his appeal to the Board of Patent Appeals and Interferences from the Examiner's final rejection decision dated April 6, 2006 of claims 1, and 3 to 6 of the above-referenced application.

1. REAL PARTY IN INTEREST

Appellant is the real party in interest.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

3. STATUS OF CLAIMS

Claims 1 to 6 were originally filed. Claim 2 was cancelled in amendment filed January 24, 2006 and claims 1 and 3 to 6 are pending. Claims 1 to 6 (sic) were finally rejected in the Office Action dated April 6, 2006, and are on appeal.

Attached hereto is an Appendix containing a copy of claims 1 and 3 to 6, which are the claims, involved in this appeal.

4. STATUS OF AMENDMENTS

Appellant filed an Amendment After Final on June 27, 2005 together with a declaration, the Amendment After Final was denied entry by the Examiner in the Advisory Action Before the Filing of an Appeal Brief dated August 17, 2006. An interview was held on August 24, 2006 and a proposed amendment to the claims was tentatively favorably considered. An Interview Summary was dated September 5, 2006. An Advisory Action Before the Filing of an Appeal Brief dated September 5, 2006 denied entry of the proposed amendment. No amendment to the claims have been entered between the date of the Final Rejection and the filing of this brief. No proposed amendments are pending at the time of filing this brief.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a knockdown corrugated box for temperature control. The requirements in the packaging market are varied. Many different designs for packaging are known, to suit many different needs. Notwithstanding the variety of packaging already known, there still exists a need for reasonably priced packaging in the form of a corrugated box that will shield temperature sensitive contents of the box from the environment that will allow the contents to arrive overnight or within a period of

a short time and yet remain fresh or frozen or, alternatively could be used to keep contents from freezing. The current designs for packaging that accomplish this objective are all extremely expensive to ship, complicated in construction and are not economically justifiable for volume shipment of ordinary perishables or commodities.

The invention provides a novel corrugated box construction made from a double walled combined web having an inside radiant energy barrier layer, a first paper liner bonded to said inside radiant energy barrier layer, a first paper flute medium bonded to the first paper liner, an outside radiant energy barrier layer, a second paper liner bonded to the outside radiant energy barrier layer, a second paper flute medium bonded to the second paper liner, and a sandwich of a radiant energy barrier layer bonded between third and fourth paper liners. The flute mediums are bonded, respectively, to the third and fourth paper liners. All radiant energy barriers are composed of metallized plastic film. The novel box is suitable for shipping temperature sensitive or perishable goods and is uncomplicated in structure and more economical than current choices. The radiant energy barrier is composed of metallized plastic film, and in the most preferred form, the metallized plastic film is a metallized polyester film. A water resistant starch is used for the bonding of the liners and media.

The temperature protection for the contents comes from two sources. First, the three layers of metallized polyester film (radiant barriers) in the box combined or sandwiched to four liners, provides good barrier to heat transfer from radiation and conduction. The second source comes from two airspaces created between the liners by the fluted mediums forming a barrier resistant to convection.

The invention contemplates the inclusion in the box of a divider, in order to divide the interior space into two or more compartments that may function to maintain different temperature criteria for different packaged goods. For example, the interior space can be divided into two compartments, at time of loading, using a novel divider consisting of a piece of the double wall combined web that forms the wall construction of the box. The divider is cut to a size slightly larger than the cross section of the box, so that when it is

pressed into the box, its perimeter is press fit to the interior wall of the box with no air gaps or spaces that would allow air conduction between the divided compartments. In this manner, the two compartments so formed can be maintained at different temperature constraints.

Each compartment of the box is packed with temperature controlling materials, such as, phase change materials, in the form of block or bags with the payload being held within the temperature controlling materials, as is generally known.

Support for claims 1 and 3 to 6 is as follows:

Claim 1. A box for shipping temperature sensitive or perishable goods comprising

Support: spec. pages 1 and 2 , under Summary of Invention 1st , 3rd, and 4th para; page 2, Detailed Description, line 2 “novel box 10”; Fig. 1

a container made from a double walled combined web having **Support: spec. page 2 1is para under Detailed Description, elements 20 to 46, Fig. 2**

an inside barrier layer composed of metallized plastic film, **Support: element 24, Fig. 2**

a first paper liner bonded to said inside barrier layer, **Support: element 26, Fig. 2**

a first paper flute medium bonded to the first paper liner, **Support: element 38, Fig. 2**

an outside barrier layer composed of metallized plastic film, **Support: element 20, Fig. 2**

a second paper liner bonded to the outside barrier layer, **Support: element 22, Fig. 2**

a second paper flute medium bonded to the second paper liner, and **Support: element 36, Fig. 2**

a sandwich of a barrier layer composed of metallized plastic film bonded between third and fourth paper liners, **Support: elements 28, 30 and 32, Fig. 2**

said flute mediums bonded, respectively, to the third and fourth paper liners. **Support: Fig. 2 and page 3 of spec. I. 2 and 3.**

Claim 3. A box for shipping temperature sensitive or perishable goods according to claim 1 further comprising the metallized plastic film being a polyester film. **Support: spec. page 1, l. 2 and 3 from bottom**

Claim 4. A box for shipping temperature sensitive or perishable goods according to claim 1 further comprising the bonding being effected by a water resistant starch. **Support: Page 1 of spec. lines 1 and 2 from bottom**

Claim 5. A box for shipping temperature sensitive or perishable goods according to claim 1 further comprising a divider for dividing the interior of the box into two compartments comprising a flat member made from a double walled combined web like the box. **Support: page 5 of spec. 3rd complete paragraph**

Claim 6. A box for shipping temperature sensitive or perishable goods comprising a container **Support: spec. pages 1 and 2 , under Summary of Invention 1st , 3rd, and 4th para; page 2, Detailed Description, line 2 “novel box 10”; Fig. 1**

made from a double walled combined web having **Support: spec. page 2 1st para under Detailed Description, elements 20 to 46, Fig. 2**

an inside layer of metallized polyester film, **Support: element 24, Fig. 2**

a first 57# kraft liner bonded to said inside layer of metallized polyester film, **Support: element 26, Fig. 2; spec. page 2 1st paragraph.**

a first 33# flute medium bonded to the first liner, **Support: element 38, Fig. 2; spec. page 2 1st paragraph.**

an outside layer of metallized polyester film, **Support: element 20, Fig. 2; spec. page 2 1st paragraph.**

a second 57# kraft liner bonded to the outside layer of metallized polyester film, **Support: element 22, Fig. 2; spec. page 2 1st paragraph.**

a second 33# flute medium bonded to the second liner, and **Support: element 36, Fig. 2; spec. page 2 1st paragraph.**

a sandwich of metallized polyester film bonded between third and fourth 26# kraft liners, **Support: elements 28, 30 and 32, Fig. 2; spec. page 2 1st paragraph.**

said flute mediums bonded, respectively, to the third and fourth liners. **Support: Fig. 2; spec. page 2 1st paragraph and page 3, I. 2 and 3.**

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claim 6 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, because the terms "57# kraft liner," and "33# flute" in claim 6 are unclear, which renders the claim vague and indefinite, because it is unclear what the numbers refer too, i.e. a trademark or specific composition.

B. Whether claims 1 and 3 to 6 are patentable over any combination of the references relied upon by the examiner, namely Clough et al.(U.S. Patent No. 6,050,412) and Kupersmit (U.S. Patent No. 4,663,207).

7. ARGUMENT

A. Rejection Based on indefiniteness under 35 USC 112

Claim 6 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the Examiner, the terms "57# kraft liner," and "33# flute" in claim 6 is(sic) unclear which renders the clime(sic) vague and indefinite. It is unclear what the numbers refer too, i.e. a trademark or specific composition.

As is common knowledge in the paper industry, the symbol "#" refers to paper weight. This symbol is used most particularly in the kraft liner arts. Most of the websites of kraft paper sellers or manufacturers list their products in this fashion, e.g.. see websites

www.sterlingpaperconverting.com

www.cascades.com

www.fast-pack.com

www.centralpack.com

www.litinpaper.com

Also, the # symbol is considered to be a standard symbol for designating paper weight, see chart below taken from the website <http://paper-paper.com/weight.html>

Additional Definitions of Standard Paper Terminology and Abbreviations

Bond	Uncoated "plain" paper - free from impurities. Also referred to as "free sheet."
Recycled	Paper manufactured from the waste paper stream. All Micro Format recycled products contain a minimum of 100% recycled material including 40% post consumer waste
Waste Paper Stream	Waste paper created during the paper manufacturing process
Post Consumer Waste	Processed Paper that has been re-used in manufacturing new paper products
Carbonless	Paper coated with special encapsulated chemicals that produce a duplicate copy without the use of carbon paper
Thermal	A paper coated with special chemicals that produce an image when heat is applied
Groundwood	A low cost paper that contains unprocessed wood fibers.
Symbol "#"	"pound" - used to describe paper weight Click for additional information on <u>PAPER WEIGHT</u>
Symbol "M"	Meter - 1 meter=39.37 inches
Symbol "mm"	Millimeter - 1 inch=25.4 millimeters
Symbol "sc"	Self Contained Paper paper that can be imaged in a printer without the use of a ribbon
Symbol "cb"	Coated Back - Carbonless Paper (part 1)
Symbol "cfb"	Coated Front and Back - Carbonless Paper internal part in a multipul part form
Symbol "cf"	Coated Front - Carbonless Paper (last part in set)
Symbol "sccb"	Self Contained sheet with carbonless coating on back normally used as part one in a multi part set in an impact printer using no ribbon
Symbol "sccb/cf"	Carbonless set - Self Contained Coated Back Sheet Part 1 Coated Front Sheet Part 2
Symbol "w"	Paper Color - White
Symbol "c"	Paper Color - Canary
Symbol "p"	Paper Color - Pink

Symbol "g"	Paper Color - Green
Symbol "b"	Paper Color - Blue

It is respectfully solicited that the Board take judicial notice of the fact that “#” is a standard paper abbreviation, and therefore, claim 6 is definite. Alternatively, applicant is willing to change from the symbol “#” to the word “pound”.

B. Rejection Based on 35 U.S.C. §103

The claims will be argued separately.

The principal reference, Clough et al, Pat. No. 6050412 discloses a corrugated paperboard modified atmosphere package container suitable for packaging cut flowers under refrigerated modified atmosphere conditions. The container is constructed of an erected corrugated paperboard blank having flaps, side panels, end panels, base panels and a lid panel which is hinged to one of the side panels. The corrugated paperboard blank has a first layer of Kraft tissue paper of 26 lb. tissue; a second layer of gas permeable, liquid waterproof polymer film adjacent the first layer of 26 lb. tissue; a third layer of 42 lb. Kraft paper adjacent the second layer of polymer film, on a side opposite the first layer of 26 lb. tissue; a fourth layer of corrugated fluting adjoining the side of the third layer of 42 lb. tissue opposite the side adjacent the second layer of polymer film; and a fifth layer of Kraft paper affixed to a side of the fourth layer of corrugated fluting opposite the third layer of 42 lb. Kraft paper layer.

The first layer tissue can be highly sized with a waterproof surface coating to provide high water repellency. The second polymer film layer can have a gas permeability which can permit oxygen and carbon dioxide to be transmitted in either direction through the polymer film at prescribed levels. However, the second polymer film layer is waterproof and prevents liquid water from being transmitted through the polymer film.

The package container can include insulation between the fluting and one of the adjoining Kraft paper layers. Insulation capability can be enhanced by a heat reflecting

metallic coated polymer film or a metal film. If a metallic coated polymer film is used, it is laminated or coated onto either surface of the box. A polyester film, which has a comparatively smooth surface and provides a better gas barrier than polyethylene which has a comparatively a rough surface, is deemed better for this purpose.

Summarizing the teaching of Clough et al, a single wall box for shipping cut flowers is disclosed using a polymer between two Kraft paper layers on one side of the flute and a Kraft paper layer on the other side of the flute. A metallized polymer layer can be laminated or coated to either side of the singled wall box. As acknowledged in the action, Clough et al does not show a double walled box construction. The insulation metallized film is on either the inside or the outside, but is not disclosed as being on both the inside and outside. The metallized film is only a secondary, and optional feature of the Clough box.

The shortcoming is supposedly supplied by Kupersmit, Pat No. 4663207. Kupersmit discloses a multiply corrugated paper wall construction having increased resistance to bowing or flexing under loads applied in a plane normal to the plane of the wall. The construction includes the provision of one or more rigid reinforcing members of elongated non-planar cross section implanted and glued into corresponding recesses in at least one of a plurality of laminae comprising the construction. The reinforcing member is metal and is of "T" shaped cross section with the leg of the "T" lying in a plane normal to the plane of the wall, or where greater strength is required, is a reinforcing member having a "W" shaped cross section.

The walls of the construction are formed from plural laminae of corrugated multiply board, which are glued together. The medial lamina is provided with an elongated T- or W- shaped recess to accommodate the metal insert, which is completely concealed within the plane of the wall.

Claim 1

The critical difference between the combination claimed in claim 1 and any combination of the above references is that the claimed double walled construction of the invention includes an inner sandwich of two paper liners with a metallized plastic film bonded to them and in between them, with the two paper liners bonded to two flutes respectively. Thus there are three radiant energy barriers disposed one inside, one outside and one intermediate the two inner liners. The three radiant energy barriers and the double wall construction give the box exceptional thermal properties (with greater strength) and enable the box to maintain the low temperature of contents for considerably longer periods. This claimed construction enables, in turn, the shipment of contents, such as, blood, tissue, organs, and pharmaceuticals, and like contents for greater distances more economically and expeditiously. This difference leads to two distinction, namely, 1) the claimed construction yields a better radiant and convection barrier than is obtained by any combination of the two cited references and imparts unobviousness to the claimed construction, and 2) the claimed construction enables the box to be manufactured without any modification to the normal manufacturing process of making a double walled box. This latter distinction is accomplished by the claimed sandwich of two Kraft liners with a metallized plastic film bonded in between them being fed in between two moving webs consisting of outer liners and inner flutes, as shown and described in the drawings and the specification, whereby the sandwich can be simultaneously bonded to the flutes. These claimed structural differences, give rise to unexpected results that render claim 1 categorically unobvious over any combination of the two cited references.

The combination of the two references is dichotomous. The teaching one gains from Kupersmit is that a multiply wall construction enables a metal insert to be embedded and concealed in the wall to strength the wall. To substitute the wall construction of Kupersmit for the wall construction of Clough et al, would simply be overkill bearing in mind the fact that the Clough box is for the transportation of cut flowers, and not some content that requires great strength for the box. No one would consider making the

Clough box in the manner taught by Kupersmit. Embedding a metal insert in the wall of Clough et al is just unreasonable.

Claim 3

The foregoing argument applies with equal vigor to claim 3, which adds the limitation of the metallized plastic film being a polyester.

Claim 4

The foregoing argument applies with equal vigor to claim 4, which adds the limitation of the bonding being effected by a water resistant starch.

Claim 5

The foregoing argument applies with equal vigor to claim 5, which adds the limitation of a divider for dividing the interior of the box into two compartments comprising a flat member made from a double walled combined web like the box. This limitation enables the box to load contents into two separate thermally isolated compartments. This structure is not to be found in either reference of record cited and applied. The limitations of claim 5 are both novel and unobvious.

Claim 6


This claim recites all limitations regarding the liners and flute in specific terms regarding paper weight. The particular paper weights selected and providing the claim limitations are novel. In combination with the three metallized plastic films, and the limitation of the sandwich construction of the medial portion of the box, the claim recites a novel construction that clearly distinguishes from Clough et al alone or in any combination with Kupersmit. The particular specifically claimed limitations of claim 6 give rise to a specific box construction that has excellent thermal properties that either will maintain a special low temperature, or a temperature that prevents freezing, to enable longer periods of shipping. The novel structure is unobvious from the cited references Clough et al and Kupersmit, neither of which is concerned with length of shipping, or the simplicity of construction of the box.

Summary

Applicant is unaware of anyone who has placed a radiant energy barrier (metallized plastic film) in the middle of a wall construction for a box. Barriers have been placed outside of the outer wall and inside of an inner wall, but no one has ever suggested placement of a barrier in the middle of a wall construction. Further, according to the claim limitations, in the present invention this is done in a manner whereby the manufacture of the double wall box does not require any modification. The novelty and unobviousness of the present invention clearly patentably distinguishes from the references cited of record, namely, Clough et al and Kupersmit. It is most respectfully submitted that the claimed construction of a box according to Claims 1 and 3 to 6 is not only novel, but clearly and emphatically unobvious.

Applicant respectfully requests that the Final Rejection be reversed and the application passed to issue.

Respectfully submitted,


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Dated: September 27, 2006

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8. CLAIMS APPENDIX

Claim 1. A box for shipping temperature sensitive or perishable goods comprising a container made from a double walled combined web having an inside barrier layer composed of metallized plastic film, a first paper liner bonded to said inside barrier layer, a first paper flute medium bonded to the first paper liner, an outside barrier layer composed of metallized plastic film, a second paper liner bonded to the outside barrier layer, a second paper flute medium bonded to the second paper liner, and a sandwich of a barrier layer composed of metallized plastic film bonded between third and fourth paper liners, said flute mediums bonded, respectively, to the third and fourth paper liners.

Claim 3. A box for shipping temperature sensitive or perishable goods according to claim 1 further comprising the metallized plastic film being a polyester film.

Claim 4. A box for shipping temperature sensitive or perishable goods according to claim 1 further comprising the bonding being effected by a water resistant starch.

Claim 5. A box for shipping temperature sensitive or perishable goods according to claim 1 further comprising a divider for dividing the interior of the box into two compartments comprising a flat member made from a double walled combined web like the box.

Claim 6. A box for shipping temperature sensitive or perishable goods comprising a container made from a double walled combined web having an inside layer of metallized polyester film, a first 57# kraft liner bonded to said inside layer of metallized polyester film, a first 33# flute medium bonded to the first liner, an outside layer of metallized polyester film, a second 57# kraft liner bonded to the outside layer of metallized polyester film, a second 33# flute medium bonded to the second liner, and a sandwich

of metallized polyester film bonded between third and fourth 26# kraft liners, said flute mediums bonded, respectively, to the third and fourth liners.

9. EVIDENCE APPENDIX

None

10. RELATED PROCEEDINGS APPENDIX

None